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Phase Memory Control in an Inhomogeneously Broadened Ensemble of Three-Level Systems and Stimulated Photon Echo Formation

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Abstract

© 2016, Springer Science+Business Media New York.Phase memory in a three-level system that is associated with the correspondence of isochromates of inhomogeneously broadened lines excited by lasers at various resonant frequencies with a common energy level in different time intervals is studied. It is shown that external spatially inhomogeneous electric fields can control such phase memory and could be used to determine the optimum conditions for forming a stimulated photon echo in a threelevel system.

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Keywords

frequency–time correlation, inhomogeneous broadening, isochromates of inhomogeneously broadened line, phase memory, spatially inhomogeneous electric field, stimulated photon echo, three-level system